

STATE OF CALIFORNIA
FISH AND GAME COMMISSION
FINAL STATEMENT OF REASONS FOR REGULATORY ACTION

Amend Section 670.5
Title 14, California Code of Regulations
Re: Animals of California Declared to Be Endangered or Threatened

- | | | |
|------|--|--|
| I. | Date of Initial Statement of Reasons: | February 24, 2004 |
| II. | Date of Pre-adoption Statement of Reasons: | June 22, 2004 |
| III. | Date of Final Statement of Reasons: | December 3, 2004 |
| IV. | Dates and Locations of Scheduled Hearings: | |
| | (a) Notice Hearing: | Date: February 4, 2004
Location: Sacramento |
| | (b) Discussion Hearing: | Date: June 25, 2004
Location: Crescent City |
| | (c) Adoption Hearing: | Date: August 5, 2004
Location: Bridgeport |
| V. | Update: | |

No substantive modifications were made to the originally proposed language of the Initial Statement of Reasons, except some clarifications and explanations have been provided in the Impact of Regulatory Action section that are reflected in Section X below.

- VI. Summary of Primary Considerations Raised in Support of or Opposition to the Proposed Actions and Reasons for Rejecting those considerations:

See [Attachment A: Response to Comments](#) (September, 2004), which summarizes the primary considerations raised in support of and in opposition to the proposed action and reasons for rejecting the considerations raised in opposition to the proposed action.

VII. Location and Index of Rulemaking File:

A rulemaking file with attached file index is maintained at:
California Fish and Game Commission
1416 Ninth Street
Sacramento, CA 95814

VIII. Location of Department files:

Files are located at three separate offices. Files containing data concerning coho salmon occurrences and abundance are located at the following regional offices:

Department of Fish and Game
North Coast Region
601 Locust Street
Redding, CA 96001

Department of Fish and Game
Central Coast Region
7329 Silverado Trail
Napa, CA 94558

Other files are located at:
Department of Fish and Game
Native Anadromous Fisheries and Watershed Branch
830 S Street
Sacramento, CA 95814

IX. Description of Reasonable Alternatives to Regulatory Action:

(a) List entire species as Endangered:

The California portion of the SONCC Coho ESU ranges from Punta Gorda to the Oregon border, occupying both smaller, coastal watersheds and larger river systems such as the Klamath, Trinity, and Eel rivers basins. Although streams supporting coho salmon in the SONCC Coho ESU are fewer than in past decades, available information suggests that the level of extirpation and population fragmentation is not as severe as in the CCC Coho ESU. Also, brood-year presence analysis indicates that the decline in the number of streams supporting coho salmon has stabilized since the mid-1980s. For these reasons, the Department concluded that the California portion of the SONCC Coho ESU is not presently

endangered with becoming extinct. Therefore, the Department does not find that listing the SONCC Coho ESU as endangered is warranted.

(b) List entire species as threatened:

As stated above, coho salmon from Punta Gorda south to San Francisco Bay are highly fragmented and have suffered local extirpations. The Department has concluded that this portion of the CCC Coho ESU is threatened with extinction. Therefore, the Department does not find that listing the CCC Coho ESU as threatened is adequate.

(c) Attempt to bring about protection and recovery through resource management and regulatory actions of federal agencies:

The National Marine Fisheries Service (NOAA Fisheries) has listed the California populations of coho salmon as threatened pursuant to the Federal Endangered Species Act (ESA). Specifically, NOAA Fisheries listed the CCC Coho ESU of coho salmon as threatened on December 2, 1996 and listed the SONCC Coho ESU as threatened on June 5, 1997; and therefore, both Coho ESUs have had federal take prohibitions in place since those dates. Under ESA, a threatened species is likely to become endangered in the foreseeable future. Despite the current listing status of the CCC Coho ESU as threatened, NOAA Fisheries' Southwest Fisheries Science Center recently concluded a status review update and found that the CCC Coho ESU is now in danger of extinction, the definition of an endangered species under ESA. In June of 2004, NOAA Fisheries proposed to reclassify the CCC Coho ESU as an endangered species under ESA.

Regardless of a species' status under federal law, "it is the policy of the state to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat..." (FGC, Section 2052). If listed, coho salmon north of San Francisco will receive the protection from unauthorized take under CESA, violations of which will be punishable under state law. The Department may authorize incidental take under CESA, but the impacts associated with authorizing any form of take will be minimized and fully mitigated according to state standards that may be different than measures required under federal law.

(d) Attempt to bring about protection and recovery through resource management or regulatory actions of other state agencies:

It is the policy of the state that all state agencies, boards, and commissions shall seek to conserve threatened and endangered species and shall use their authorities in furtherance of the purposes of CESA. However, other state agencies generally do not have the authorities or resources necessary to adequately protect or manage species and their habitats. Even if such commitments or actions are forthcoming, the policy of the Legislature is that they are no substitute for the recognition and protection intended by CESA. As such, coho salmon will not be adequately protected through the resource management and regulatory actions of other state agencies.

(e) Decline to List (No Change Alternative):

Failure to officially recognize coho salmon between San Francisco and Punta Gorda as endangered and coho salmon between Punta Gorda and California's northern border as threatened will deprive this species of protection under CESA. In such circumstances, without such recognition, valuable state mechanisms to protect against the continued degradation of the species will not be available. The Commission would fulfill its statutory obligation in adopting the proposed regulation.

(f) Consideration of Alternatives:

In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purposes for which the regulation is proposed or would be as effective and less burdensome to the affected private persons than the proposed regulatory action.

X. Impact of Regulatory Action:

The Administrative Procedure Act (APA) requires state agencies to assess the potential for adverse economic impacts whenever they propose to adopt, amend, or repeal any administrative regulation (see generally Gov. Code, §§ 11346.3, 11346.5). The APA also requires state agencies to adhere to the economic assessment requirements to the extent such requirements do not conflict with other provisions of state or federal law (*Id.*, § 11346.3, subd. (a)).

CESA does not specifically prohibit consideration by the Commission of potential economic impacts that may result from a decision to list a species as threatened or endangered under state law. Yet, the information and criteria by which the Commission is required to determine whether a species should be listed under CESA as threatened or endangered are limited to biological considerations (see, *e.g.*, Fish & G. Code, §§ 2062, 2067, 2074.6). The Office of the Attorney General, as a result, has consistently advised the Commission that it should not consider economic impacts in making findings in the CESA listing context. This recommendation is also based on the fact that this provision of CESA is modeled after its federal counterpart, the federal Endangered Species Act, which specifically prohibits consideration of economic impacts during the listing process. The recommendation is also informed by state case law indicating that economic considerations may not be considered by the Commission when designating a species as a candidate for listing under CESA (*Natural Resources Defense Council v. California Fish and Game Comm.* (1994) 28 Cal.App.4th 1104, 1117, fn. 11).

Therefore, the Commission does not believe it is authorized to take economic impacts into account when making findings for listings under CESA. However, since the findings provision of CESA governing listing decisions is silent with respect to economic considerations, the “conflict” provision in section 11346.3, subdivision (a), of the APA may not obviate the requirement to assess the potential for adverse economic impacts in the present case. While the Commission does not believe this is the case, an analysis of potential economic impacts that may result from the proposed regulatory action on businesses and private individuals is provided below. The analysis is intended to provide disclosure, which is one of the basic premises of the APA.

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the following statutory categories have been made:

- (a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed regulatory action to designate coho salmon between San Francisco and Punta Gorda as endangered and between Punta Gorda and the northern border of California as threatened will afford the species the protections of CESA, which prohibit take, possession, purchase, and sale (herein collectively referred to as "take") of threatened and endangered species, except as authorized by the Department. To the extent businesses are engaged in activities that will take coho salmon, the proposed regulatory action may result in adverse economic impacts directly affecting businesses, including the ability of California businesses to compete with businesses in other states.

Where the Department authorizes take of coho salmon that is incidental to an otherwise lawful activity, impacts of the taking must be minimized and fully mitigated, and any such mitigation must be monitored for effectiveness under CESA. Permitting under CESA for incidental take of coho salmon would result in some increased costs when compared to the status quo, which includes the federal take prohibition under the federal ESA. However, the magnitude of such effects is speculative. There are a number of ways that the magnitude can be estimated, but the results will vary depending on the methodology and assumptions involved. Three examples of differing perspectives or methodologies are provided below. Following a review of the methodologies is a conclusion as to the estimates of economic impact.

Firstly, one perspective is that because the majority of such activities are already subject to federal take prohibitions under the federal ESA, and therefore, have incurred economic consequences as a result since the federal listings (1996 and 1997), protection provided under CESA should not result in a significant increase in costs or burdens to California businesses. This is particularly true where consistency determinations pursuant to Fish and Game Code section 2080.1 can be utilized to provide incidental take coverage under CESA.

Other perspectives and/or methodologies are provided below in reference to businesses engaged in activities such as timber management, agriculture, in-stream sand and gravel extraction,

and other businesses if these activities would result in the take of coho salmon under CESA.

Secondly, with regard to timber management activities, another methodology is based on a portion of the analysis of potential costs of recovery of coho salmon relative to timber management activities, which were identified in Section I.13.1.2 of the "Recovery Strategy for California Coho Salmon (*Onchorhynchus kisutch*), Report to the California Fish and Game Commission (February 2004)," attached hereto as Exhibit 1. A currently unquantifiable fraction of these potential costs can potentially be attributed to the listing of the species, as opposed to recovery, if practices result in take of coho salmon under CESA and the mitigation measures that were analyzed are utilized either by regulation¹ or through individual timber harvest review processes to address take of coho salmon. The costs of proposed policies to guide the issuance of incidental take authorizations were estimated in the Recovery Strategy for Coho Salmon to be \$151-373 million, or stated another way, a reduction in timberland values by an estimated 2.8 to 6.9 percent (timberlands are valued at \$1,400 per acre on average), which is a reduction between \$39 and \$97 per acre.

However, in reviewing the analysis, the Department identified some errors in the analysis and has provided corrections, which are summarized in Exhibit 2. As a result of these errors, the estimate reflected in the Recovery Strategy for Coho Salmon is too high. A more accurate estimate, based on information to date, is \$204-252 million. This is equivalent to a range of 3.8 to 4.7 percent, which represents a reduction in timberland values (which are valued at \$1400/acre on average) of between \$53 and \$66 per acre. These impacts would be spread over at least 40 years, a typical harvest rotation for commercial timberlands. In addition, these estimates assume that all of the recommended timberland management provisions would be applied to every timber harvesting plan and that none of the measures are already part of the plan. The Department does not anticipate this will be the case because the proposed policies would be recommended as necessary on a site-

¹ Section 2112 of the Fish and Game Code authorizes the Department to develop and adopt rules and guidelines to implement policies to guide the Department's issuance of incidental take permits under CESA. To date, the Department has not proposed any such regulations. Therefore, this methodology is offered as a way to estimate costs based on a hypothetical set of circumstances. It should not be viewed as any kind of prejudgment on the part of the Department as to what, if any, regulations would be promulgated. The establishment of any regulations would be subject to applicable environmental, administrative, and public review processes.

specific basis when take of the species would occur or if the California Department of Forestry and Fire Protection were to require them in order to mitigate significant adverse effects on the environment pursuant to the California Environmental Quality Act. Thus, costs would likely be only a fraction of the revised estimates described above.

Thirdly, another methodology yields yet a different estimate of costs regarding timber management activities. This methodology is based on three factors, 1) the regulation's application over at least two to three decades, 2) its applicability to many of the watersheds from San Francisco to the Oregon border, and 3) the estimated level of noncompliance with existing regulations (such as the federal listing, water law, etc.). The state listing of coho salmon south of San Francisco in 1995 resulted in increased costs to timber companies operating within known coho salmon habitat areas. These costs are associated with implementation of mitigation measures for coho salmon, and the increased regulation. The Department of Fish and Game (DFG), in cooperation with California Department of Forestry and Fire Protection (CDF), developed a programmatic approach, through F&G Code section 2090 (no longer active), to minimize the regulatory costs to businesses. The mitigations, which are listed in "Coho Salmon Biological Opinion and 2090 Agreement for Timber Harvest Plans South of San Francisco Bay (May 7, 1996)," are nearly identical to many of the requirements adopted four years later under the Forest Practice Rules, specifically the Threatened and Impaired Watershed Rules ("Protection for Threatened and Impaired Watersheds, 2000", sections 895, 895.1, 898, 898.2, 914.8, 934.8, 954.8, 916, 936, 956, 916.2, 936.2, 956.2, 916.9, 936.9, 956.9, 916.11, 936.11, 956.11, 916.12, 936.12, 956.12, 923.3, 943.3, 963.3, 923.9, 943.9 and 963.9, Title 14, CCR (which can be found on the Board of Forestry website at: www.fire.ca.gov/BOF/pdfs/FRLZ00011814.pdf). Therefore, the standard mitigations for coho salmon previously developed for the 1995 listing of coho salmon south of San Francisco have been universally applied north of San Francisco since 2000 (that is, two years prior to the finding that coho salmon north of San Francisco warrant listing) through the Forest Practice Rules. Only where additional, site-specific protective measures are needed, will the timber industry experience an increased cost in mitigation measures. Therefore, the annual costs to individual timber operators caused by the listing of coho salmon north of San

Francisco will be minimal (estimated to be \$180,000/year); however, the cumulative impact from San Francisco to the Oregon border, over 20-30 years may be in the millions (\$3.6-5.4 million). The cost summarized above and outlined in Table 1 does not include the costs associated with timber operations performed in accordance with HCPs/NCCPs. Under state law, the Department has the opportunity to just concur with the federal action (Fish & G. Code 2080.1); thereby, increasing neither the costs nor delaying the project for a project which already has in place a HCP/NCCP.

Table 1: Estimated cost to timber management.

COUNTY	Non-Federal Forested lands		Coho Streams	THPs ¹	THPs ² ITP	2081 ³	Mitigation ⁴	
	Total Streams	Coho Streams						
	miles	miles	Percent					
DEL NORTE	332.49	97.92	29.45%	30	4	\$4,417	\$30,922	
HUMBOLDT	3,048.90	347.35	11.39%	110	6	\$6,266	\$43,862	
MENDOCINO	3,441.30	609.99	17.73%	100	9	\$8,863	\$62,039	
SISKIYOU	1,347.15	121.90	9.05%	30	1	\$1,357	\$9,501	
SONOMA	1,060.95	72.20	6.81%	20	1	\$681	\$4,764	
TRINITY	866.83	62.16	7.17%	10	1	\$1,000	\$7,000	
Grand Total	10,260.83	1,311.52	12.78%	300	23	\$22,584	\$158,089	\$180,673 ⁵

¹=average number of individual THPs/county/year (excluding HCPs and NCCPs) within the range of coho salmon

²=estimated number of individual THPs needing an incidental take permit/year; based on staff interviews

³=estimated cost for incidental take permits for county (F&G Code section 2081)

⁴=estimated increase in county, THP mitigation costs required by 2081

⁵=total cost of incidental take permits and associated mitigation for coho salmon per year

With regard to agricultural activities, the state listing of coho salmon south of San Francisco in 1995 did not result in increased costs. The federal listing of coho salmon in 1996 and 1997 increased the cost of operation of large diversions, such as those serving municipalities and hydropower, largely because of regulatory compliance (i.e., ESA Section 7 or 10 consultations). The state listing of coho salmon north of San Francisco will not increase the costs significantly above those costs already incurred under federal law. That is, under state law, DFG has the opportunity to just concur with the federal action pursuant to Fish and Game Code section 2080.1; thereby, increasing neither the costs nor delaying the project.

In areas of the state where an accumulation of small diverters has been determined to have the potential to take coho salmon and where the appropriate federal agency has not previously taken action, the DFG will have to engage the legal diverters in a watershed approach to incidental take authorization. (An effort is currently under way with the Scott and Shasta Valleys.) Costs to agricultural diverters will be those necessary to participate in the regulatory process and costs to bring the diversion up to a standard that will minimize the potential for take of coho salmon and other co-occurring federally-listed species (such as coastal Chinook and steelhead outside of the Klamath Basin). The extra regulatory and mitigation burden caused specifically by the state listing of coho salmon is difficult to separate from the existing regulatory and mitigation burden caused by the prior federal listing of coho salmon and the prior federal listing of the co-occurring species, but may result in some additional costs (estimated to be \$200,000/year). In summary, the cumulative economic impact from San Francisco to the Oregon border, over 20-30 years may be in the millions (\$4-6 million). The cost summarized above and outlined in Table 2 does not include the costs associated with water users which are also required to obtain an ESA section 7 or 10 consultation. That is, under state law, DFG has the opportunity to just concur with the federal action pursuant to Fish and Game Code section 2080.1; thereby, increasing neither the costs nor delaying the project.

Table 2: Estimated costs to water users

	Total Streams	Coho Streams	Coho Streams	1600 ¹	1600 ² ITP	2081 ³	Mitigation ⁴	
	miles	miles	Percent					
DEL NORTE	1,206.11	230.43	19.11%	22	2	\$2,102	\$10,508	
HUMBOLDT	4,571.23	759.97	16.63%	165	14	\$13,716	\$68,579	
MARIN	540.89	42.79	7.91%	14	1	\$554	\$2,769	
MENDOCINO	4,846.70	737.10	15.21%	125	10	\$9,505	\$47,526	
SISKIYOU	4,895.31	474.02	9.68%	16	1	\$775	\$3,873	
SONOMA	1,862.88	145.41	7.81%	150	6	\$5,854	\$29,271	
TRINITY	3,757.39	207.49	5.52%	26	1	\$718	\$3,589	
Grand Total	21,680.50	2,597.22	81.86%		33	\$33,223	\$166,116	\$199,339 ⁵

¹=average number of individual 1600 agreements (excluding those associated with a ESA section 7 or section 10) within the range of coho salmon

²=estimated number of individual 1600s needing an incidental take permit/year; based on staff interviews

³=estimated cost for incidental take permits (F&G Code section 2081) for county

⁴=estimated increase in county mitigation costs for 1600s, as required by 2081

⁵=total cost of incidental take permits and associated mitigation for coho salmon per year

With regard to instream gravel mining, the state listing of coho salmon south of San Francisco in 1995 did not result in increased costs to instream gravel operators. The federal listing of coho salmon in 1996 and 1997 may have slightly increased the cost of operation of instream mines, because of an increased regulatory burden (i.e., ESA Section 7 consultations). The state listing of coho salmon north of San Francisco will not increase the costs significantly above those costs already incurred under federal law. That is, under state law, DFG has the opportunity to just concur with the federal action pursuant to Fish and Game Code section 2080.1; thereby, increasing neither the costs nor delaying the project.

Costs to other businesses, such as developers, is likely to be minimal as most of the watersheds are listed as impaired under the Clean Water Act, and therefore, are subject to TMDL standards, which include protective measures for anadromous salmonids, including non-listed species. The only additional costs may be those associated with seeking incidental take authorization from the Department pursuant to Fish and Game Code section 2081. Since coho salmon have been extirpated from the densely developed watersheds within the historical range of coho salmon, i.e., those that drain into San Francisco Bay, costs associated with increased regulation and mitigation will be minimal in urbanized

areas.

Presently, California ocean and inland non-Indian fisheries are closed by federal and state regulators to the direct harvest of coho salmon. Therefore, there would be no adverse effect from the proposed listing on sectors associated with coho salmon fisheries.

Conclusion: As was explained above, although an analysis of potential economic impacts is not required by law and may not be considered by the Commission in determining whether a species should be listed under CESA, an analysis was nonetheless set forth with the intent of providing disclosure. The analysis is theoretical; the actual effects or costs to businesses is not known and cannot be calculated or estimated with any certainty at this time. Considering the three methodologies set forth and given the limitations of available information, the Department concludes that based on available experience a reasonable estimate of costs would be a total \$4-6 million over a span of 20-30 years.

- (b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California:

Given the potential for additional economic impacts as identified above, there may be the potential for adverse impacts on new or existing jobs; however, these impacts are unlikely to cause the elimination of existing businesses in California. Whether these potential impacts actually occur depends upon the extent to which commercial activities result in take of coho salmon under CESA, the level of compliance with the federal ESA, and the costs, if any, of minimizing and mitigating for take under CESA. Therefore, these impacts are speculative and difficult to estimate at this time.

In addition, there is the potential for creation of jobs and businesses, or expansion of businesses in California. The public sector may create new jobs as a result of mitigations such as road treatment, culvert replacement, and habitat enhancement. These jobs would likely be created largely in rural counties with high levels of unemployment. Increased public education could result in increased contributions to the State's Rare and Endangered Species Tax Check-off program, which would in turn provide further funding for management and recovery activities for all

listed species.

Private tour operators could also potentially benefit economically from increased tourism, interpretation, and educational activities.

Additionally, private environmental consulting firms could benefit economically from assisting in the development and implementation of mitigation measures.

(c) Cost Impacts on a Representative Private Person or Business:

A representative private person or business may experience economic impacts as described in section (a) above.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State:

As a project applicant, a state agency may realize costs associated with projects involving the incidental take of coho salmon as described in section (a) above.

The proposed regulatory action is not expected to affect federal funding to the state. (However, the proposed regulatory action may lead to increases in federal funding to the state.)

(e) Nondiscretionary Costs/Savings to Local Agencies:

As a project applicant, a local agency may realize costs associated with projects involving the incidental take of coho salmon as described in section (a) above.

(f) Programs Mandated on Local Agencies or School Districts:

None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4:

None.

(h) Effect on Housing Costs:

None.

EXHIBIT 1

Section I.13.1.2 of the Recovery Strategy for California Coho Salmon (*Onchorhynchus kisutch*), Report to the California Fish and Game Commission (February 2004)

I.13.1.2 Alternative B

There are two ways in which certain sections of Alternative B could be implemented. The Commission could approve Section 17 and 18 for inclusion in the strategy as a recommendation to the California Department of Forestry and Fire Protection (CDF) and the Department to improve within existing law and authorities the implementation and enforcement of the Forest Practices Rules to ensure that timber operations are consistent with recovery of coho salmon. If existing law and authorities are found to be inadequate to provide for such improvements, then the Commission could alternately recommend that the Department and/or CDF seek legislation to provide such authority. This means that CDF would support the Department in the Timber Harvest Plan (THP) review process if the Department determined that any of these measures, as determined on a site-specific basis should be applied to protect coho salmon. Alternatively, the Commission could approve Sections 16, 17, and 18 together as guidelines (pursuant to FGC §2112) for issuance of Incidental Take Permits under FGC §2081(b) or consistency determinations under FGC §2080.1 where these recommended measures would fully mitigate take and at the same time contribute to the recovery of coho salmon. The effect of this would be to streamline the permitting process as an incentive for recovery. In accordance with FGC §2114, the guidelines would be part of the Commission's rulemaking for listing.

The main cost difference between Alternatives B and A is that the cost of the road restrictions is much lower in the former. Alternative B requires only that "for construction, reconstruction, upgrades, maintenance, and operation of roads within and appurtenant to THPs detailed site specific recommendations will be developed consistent with the Handbook for Forest and Ranch Roads (prepared by Pacific Watershed Associates, 1994c, for the Mendocino County Resource Conservation District in cooperation with CDF and the U.S. Soil Conservation Service. Mendocino Resource Conservation District, Ukiah, California. 163 pages)." It is difficult to quantify the costs of this action item as it does not entail specific changes, and since many companies already follow these practices. Thus, while the road restrictions in Alternative B may well impose costs for some operations and at some locations, they are not quantified in this document.

Several aspects of Alternative B are identical to Alternative A. These include the requirement for Class I, II and III watercourses described above. One difference is for watercourses where an inner gorge is present. For Class II only, Alternative B requires that the landowner (1) provide 200' Watercourse and Lake Protection Zones (WLPZ); (2) require uneven-aged management; (3) prohibit tractor operations; and (4) require review of timber operations by a registered geologist. The cost of the "inner gorge" requirements is a loss in per-acre value of between 40 and 50 percent since even-age regeneration is still prohibited, but as opposed to Alternative A the loss applies only to Class II watercourses. The weighted average value of timberland is reduced between 1.2 and 1.5 percent.

One requirement that is contained in Alternative B and not Alternative A is that where a headwall swale is present, (1) utilize only single-tree selection prescriptions as per 14 CCR §913.2(a)(2)(A) that retain the diameter distribution present before timber operations or a "thinning from below" prescription as per 14 CCR §913.3(a) that retains dominant and codominant trees; and (2) require review of timber operations by a certified engineering geologist. This requirement will also prohibit even-age regeneration, resulting in a loss in land values of between 40 and 50 percent where it applies. PALCO estimates that 1 percent of its land would be affected by this provision, so that the weighted average loss in value from this provision is between 0.4 and 0.5 percent.

Taken together, Alternative B is estimated to reduce timberland values by 2.8 to 6.9 percent. The difference between the cost of this alternative and the cost of Alternative A is explained by the looser restrictions in road usage, construction and maintenance in the latter.

Using the calculated figures for percentage diminution in timberland value, it is possible to obtain a rough measure of the costs of the two alternatives. The percentage diminution in value should be applied to the value of timber harvesting rights per acre to obtain per-acre costs. Based on the advice of PALCO, we assume that the rights to harvest timber throughout the range of coho salmon habitat is valued at about \$1,400 per acre on average. It follows that Alternative A amounts to a diminution in value of between \$109 and \$237 per acre. Alternative B will reduce values by between \$39 and \$97 per acre.

Since the publication of the November 2003 Public Review Draft of the Recovery Strategy new recommendations were added to Alternative B by the Department in response to public comments. Two of these recommendations require some discussion. The Department recommends in Section 19 that a "proof of concept" pilot program be developed and implemented to test a mathematical or scientific method of cumulative effects analysis as was suggested in the 2001 report, *A Scientific Basis for the Prediction of Cumulative Watershed Effects*, (otherwise known as the "Dunne Report"), by the U.C. Committee on Cumulative Watershed Effects. The pilot program would be developed and implemented by a panel of experts such as those at the University of California in cooperation with the Department, CDF, and the State Water Resources Control Board. The cost of this recommendation is approximately \$900,000. In addition, the Department recommends in Section 17.b that "For Class I watercourses, within the watercourse and lake protection zone retain trees that provide direct shading to pools, consistent with the conifer retention standards in the Threatened and Impaired Watershed Rules." In discussions with PALCO and experts at the Department, it has been estimated that the impact of this additional recommendation will be negligible. In light of this minimal cost increase, the estimated total cost of implementing Alternative B has not been changed as a result of this additional recommendation. The limited impact of this additional recommendation is largely a result of the limited range of its impact; few THPs are impacted and when they are impacted the measure would affect the harvest of at most ten trees per THP. In addition, the measure generally will not result in a diminution of board feet harvested; landowners and/or companies would be allowed to substitute harvest elsewhere for the affected trees. This may increase the total costs of harvest, but not by a significant amount.

Data from CDF indicate that there are 3.84 million acres of privately owned timberland throughout the range of coho salmon habitat. Taking this acreage of Timberland Production Zones and multiplying by the weighted average per acre diminution in value, it follows that the cost of Alternative A is between \$419 and \$910 million. The cost of Alternative B is lower, and is estimated to fall between \$151 and \$373 million. These are present value calculations consistent with other fiscal cost estimates detailed in this report.

EXHIBIT 2

Corrections to Section I.13.1.2 of the Recovery Strategy for California Coho Salmon
(*Onchorhynchus kisutch*), Report to the California Fish and Game Commission
(February 2004)

Element	Recovery Strategy estimate Alternative A impact	Recovery Strategy estimate Alternative B impact	Comment	Revised Alternative B Impact
Class I – large tree retention	0.2-2.6%	0.2-2.6%	The estimate for Alternative A should have been zero since this measure is <u>identical</u> to the current Forest Practice Rules. Alternative B will likely have an additional impact since a minority of the retained trees may be more than 50' from the watercourse and some of these might not be retained in the absence of this application.	0-0.2%
Class I inner gorge	1.6-2.0%	1.6-2.0%	Already required in Forest Practice Rules. No incremental economic impact.	0
Class II	1.0-1.4%	1.0-1.4%	At most, alternative B would be applied to about 1/3 of Class II WLPZ's. (Based upon preliminary results from an ongoing analysis). Due to special additional restrictions already within the Forest Practice Rules for the coastal zone, Santa Cruz and Marin counties, additional economic impacts of this measure, in those areas, will be negligible. Negligible impact on NTMP's because unevenaged management is already required.	0.3-0.5%
Class II inner gorge	0	1.2-2.5%	Due to special additional restrictions already within the Forest Practice Rules for the coastal zone and Santa Cruz county, additional economic impacts of this measure, in those	1.2-1.5%

			areas, will be negligible. No economic impact on NTMPs because unevenaged management is already required. No impact where unevenaged management is already proposed.	
Road Restrictions	5-10%	Not quantified but much lower than alternative A.	Assume 2%	2%
Class III	0.0-0.9%	0.0-0.9%	Would be lower for alternative B since the measures is required only where is silviculture is even-aged. Due to special additional restrictions already within the Forest Practice Rules for the coastal zone, Santa Cruz and Marin counties, additional economic impacts of this measure, in those areas, will be negligible. No economic impact on NTMPs because unevenaged management is already required.	0.0-0.5%
Headwall swales	0	0.4-0.5%	Due to special additional restrictions already within the Forest Practice Rules for the coastal zone and Santa Cruz county, additional economic impacts of this measure, in those areas, will be negligible. No economic impact on NTMPs because unevenaged management is already required. Would be a new requirement only where selection silviculture is not proposed.	0.3-0.4%
Sum – Range of Economic Effects	7.8-16.9%	4.4-9.9%		3.8-4.7%
	\$376-909 M	\$271-532 M		\$204-252 M

Updated Informative Digest/Policy Statement Overview

At its August 30, 2002 meeting in Oakland, California, the Fish and Game Commission (Commission) made a finding that coho salmon north of San Francisco warrants listing pursuant to the California Endangered Species Act (CESA). Specifically, the Commission determined that the coho salmon populations between San Francisco and Punta Gorda should be listed as an Endangered Species and the populations between Punta Gorda and the northern border of California should be listed as a Threatened Species.

The Commission therefore proposes to amend Section 670.5 of Title 14, CCR, to add the coho salmon populations between San Francisco and Punta Gorda to the list of Endangered Species and the coho salmon populations between Punta Gorda and the northern border of California to the list of Threatened Species.

This proposal is based upon the documentation of population declines and threats to the habitat of this species to the point that it meets the criteria for listing by the Commission as set forth in CESA. The Commission is fulfilling its statutory obligation in making this proposal which, if adopted, would afford coho salmon north of San Francisco with the recognition and protection available under CESA.

On August 5, 2004, at its meeting in Bridgeport, California, the Commission adopted the proposed changes to the regulations, adding the coho salmon populations between San Francisco and Punta Gorda to the list of Endangered Species and the coho salmon populations between Punta Gorda and the northern border of California to the list of Threatened Species.

Subsection (a)(2) of Section 670.5, Title 14, CCR is amended to read:

(2) Fishes:

- (A) Bull trout (*Salvelinus confluentus*)
- (B) Mohave tui chub (*Gila bicolor mohavensis*)
- (C) Owens tui chub (*Gila bicolor snyderi*)
- (D) Bonytail (*Gila elegans*)
- (E) Colorado squawfish (*Ptychocheilus lucius*)
- (F) Lost River sucker (*Deltistes luxatus*)
- (G) Modoc sucker (*Catostomus microps*)
- (H) Shortnose sucker (*Chasmistes brevirostris*)
- (I) Razorback sucker (*Xyrauchen texanus*)
- (J) Desert pupfish (*Cyprinodon macularius*)
- (K) Owens pupfish (*Cyprinodon radiosus*)
- (L) Unarmored threespine stickleback (*Gasterosteus aculeatus william soni*)
- (M) Winter run chinook salmon (*Oncorhynchus tshawytscha*)
- (N) Coho salmon (*Oncorhynchus kisutch*) south of ~~San Francisco Bay~~ Punta Gorda, California.

Subsection (b)(2) of Section 670.5, Title 14, CCR is amended to read:

(2) Fishes:

- (A) Delta smelt (*Hypomesus transpacificus*)
- (B) Cottonball Marsh pupfish (*Cyprinodon salinus milleri*)
- (C) Rough sculpin (*Cottus asperimus*)
- (D) Spring-run chinook salmon (*Oncorhynchus tshawytscha*) of the Sacramento River drainage
- (E) Coho salmon (*Oncorhynchus kisutch*) from Punta Gorda, California to the northern border of California.

ADDENDUM TO FINAL STATEMENT OF REASONS

Amend Section 670.5, Title 14, CCR Re: Threatened and Endangered Species – Coho Salmon

The Fish and Game Commission, in adopting the regulatory language of this rulemaking, adopted the Department of Fish and Game's responses to public comments as set forth in the Final Statement of Reasons.